D - Zoning Compliance Narrative

Zoning Compliance Narrative

This section briefly describes how WP East Acquisitions, L.L.C., (the "Applicant") has fulfilled the various submission requirements as described in Article 5 - Special Permits, Special Permits with Site Plan Review (SPSR), Site Plan Approval and Variances, Article 6.4 – Assembly Square Mixed-Use District (ASMD), and Article 16 - Planned Unit Development of the Somerville Zoning Ordinance adopted March 23, 1990, as amended through September 20, 2017 (the "Ordinance"). It also summarizes various applicable Ordinance provisions from which Alta XMBLY at XMBLY Development (the "Project") requires zoning relief. The numbering used throughout this chapter follows the section numbering of the applicable Ordinance.

4.1 ARTICLE 5: SPECIAL PERMITS, SPECIAL PERMITS WITH SITE PLAN REVIEW, SITE PLAN APPROVAL AND VARIANCES

5.2.3.1 Name, addresses, and telephone numbers of the applicant, the owner, if other than the applicant, and other agents for the applicant, such as the architect, engineer and/or attorney and the name and address of the proposed project:

The name, address and telephone numbers for the Applicant, Engineer, Architect and Attorney are provided in Section B Special Permit Application and on the cover sheet of the Special Permit plan set (the "Plans"), found in Section H-I.

5.2.3.2 Plot plan certified by land surveyor indicating total land area, boundaries, angles and dimensions of the site and a north arrow:

Please refer to the Existing Conditions Plan of Land and the Layout and Materials Plan, certified by a Professional Engineer, found in Section H-I, which provides land areas, boundaries, angles and dimensions of the Site and a north arrow.

5.2.3.3 Scaled site plan(s) certified by a registered land surveyor, architect, landscape architect or engineer showing:

3.a) present and proposed use of the existing land and existing buildings, if any:

The existing site is comprised mostly of paved surface parking lot. The proposed use of the Project includes a total of 329 apartments and amenity space that includes (324) units on the upper floors above a 2-level parking garage and (5) townhome units at the street level along Road K. The internal parking garage is wrapped at the base of the building by multiple retail and restaurant spaces as well as building

entrance lobbies to activate the street edges. The proposed building and its associated site improvements are shown on the Overall Site Plan, Layout and Materials Plan, Grading and Drainage Plan, and the Utility Plan, all certified by a Professional Engineer. Building elevations are shown on Elevations in Section H-IV prepared by The Architectural Team (TAT).

3.b) dimensions of existing and proposed building(s) or other structures including height, setback(s) from property lines and total square footages of all floors:

The proposed Project footprint is shown on the Layout and Materials Plan found in Section H-1. The total gross square footage is approximately 343,630 square feet (GSF) (427,954 SF including parking). The proposed Project building height is 84'-11" to top of the residential roof. A Zoning Summary chart for the Project listing the required and provided dimensional requirements is located on the Layout and Materials Plan. Table 4-1 below shows the ground coverage and total net floor area.

Table 4-1 – Building Coverage and Area

Description	Ground Coverage (SF)	Net Floor Area (NSF)
The Project	62,876±	286,717±

3.c) locations and dimensions of any easements and public or private rights of way, or other burdens, existing and proposed:

Existing easements are shown on the Existing Conditions Plan of Land, found in Section H-I. The Applicant is working towards appropriate easement agreements between the Owner, the City, and various utility companies which will be provided with the subdivision plan of land.

3.d) at-grade parking and loading areas showing number, location, and dimensions of the parking and loading spaces, driveways, access and sidewalks:

The proposed Project building includes the construction of 188 total structured garage parking spaces within the building designated for residential use. Included in this count are 6 accessible spaces and 1 van accessible spaces. Standard parking spaces will be 9-feet by 18-feet, standard accessible parking spaces will be 13-feet by 18-feet, and the van accessible space will be 16-feet by 18-feet which includes an accessible aisle. Drive aisles within the garage will be 24-feet wide. Access to the proposed Project building is provided via Road L along the north side of the building. A waiver is being requested to reduce the minimum required residential parking requirement.

The garage will contain 111 bicycle parking spaces for bicycle parking which meets the required 110 residential bicycle parking spaces. The loading area for the Project is provided on in the designated loading bay west of the garage entrance accessed on Road L.

5.2.3.4 A brief written description of the proposed project, such as proposed construction or demolition, all uses, who the project is intended to serve, expected number of employees and/or occupants and methods and hours of operation, as applicable:

The Project consists of residential apartments over ground floor retail and townhomes. Construction types include wood construction over a concrete podium garage. The Project is anticipated to begin construction in the summer of 2019 through late 2021. The apartments will be open 24/7.

Access to the structured garage is provided on Road L, along the northern side of the building.

The proposed building is projected to have approximately 424 occupants/employees.

Details for the ground floor uses and employee counts will be provided in a future submission for City review. Hours of operation for the ground floor retail uses will be determined based on tenant selection, which is unknown at the time of this application.

5.2.3.5 The total floor area and ground coverage ratio of each proposed building and structure:

Please refer to the Overall Site Plan and Layout and Materials Plan (Plan C-4) in Section H-I for the program floor area ratio and the size of the proposed uses.

Table 4-1 – Building Coverage and Area

Description	Ground Coverage (SF)	Net Floor Area (NSF)
The Project	62,876±	286,717±

5.2.3.6 Front, side and rear elevations:

Elevations of the front, side, and rear of the Project are shown on the Architectural Plans and Elevations found in Section H-IV.

5.2.3.7 Existing and proposed contour elevations in two-foot increments:

Existing contour elevations are shown in one-foot increments and with spot grade elevations on the Existing Conditions Plan of Land (Sv-1). Proposed contour elevations are shown in one-foot increments and with spot grade elevations on the Grading and Drainage Plan in Section H-I.

5.2.3.8 Provisions for vehicular and pedestrian circulation:

Pedestrian sidewalks, a minimum of 5-foot wide, are proposed along the perimeter of the Site connecting points along Revolution Drive, Grand Union Boulevard, Road K, and Road L. The dimensions, landscape, hardscape, and materials can be found in the Civil Site Plans, found in Section H-I.

5.2.3.9 Color, materials, and exterior features of proposed structures:

The material palette for The Project will consist of masonry, metal panel, cementitious panels, and storefront wall system at the podium floors. The upper floors will be primarily masonry, cementitious panels, metal panels, and windows. The colors of the building will be neutral in the fields with bold accent colors at key design elements. A photographic representation of the materials and colors are included Sections H-III: Architectural Renderings, H-IV: Architectural Floor Plans and Elevations, and H-VI: Architectural Building Diagrams.

5.2.3.10 Landscaping and screening, including trees, stones, walls, fences and other features to be retained and removed as well as color, size and type of landscape surface materials:

The existing site is currently a surface parking lot with a steep grass slope in poor condition along Grand Union Boulevard. The surface lot and grass slope will be removed during construction. The Project includes landscaping in the form of street trees and raised planting beds. Parking and service areas will be entirely within the proposed building, screening of such elements from the public way will be achieved through architectural design. Detailed landscape plans can be found in Section H-II.

5.2.3.11 Measures taken to preserve and protect natural resources:

No natural resources such as wetlands or other water features exist on the Project Site. The Project will minimize environmental impacts by locating the development on previously paved and/or otherwise disturbed land. It is also the intent of the proposed Project to revitalize the natural qualities and landscaping of the Site and increasing the

amount of open space to be more than the required 25 percent total open space minimum and 12.5 percent useable open space minimum. A comprehensive stormwater management system combined with the new open space features will significantly enhance water quality thereby protecting surrounding natural resources and restoring a natural water cycle.

5.2.3.12 Outdoor lighting, including location and intensity of lighting facilities:

Outdoor lighting will be provided to meet code requirements and every effort will be made to abide by Dark Sky Requirement. Exterior street fixtures will match the City of Somerville Assembly Row Roadway streetscape standards.

5.2.3.13 Dimensions and locations of signs, proposed and existing:

Please refer to the Layout and Materials Plan (Plan C-4) in Section H-I for sign dimensions and locations.

5.2.3.14 Location and significance of historic structures:

A review of the Massachusetts Historical Commission's ("MHC") Inventory of the Historic and Archaeological Assets of the Commonwealth, available through the Massachusetts Cultural Resource Information System ("MACRIS"), indicated one previously inventoried property located in the Project area. A 1927 service station (SMV.1003) was recorded in 1990 along Middlesex Avenue, but has since been demolished. The property was recorded as part of the Assembly Square Area (SMV.I); in 2002 the MHC opined that the area did not retain enough integrity to be eligible for the National Register, and the area has recently been redeveloped.

5.2.3.15 Method of handling solid waste disposal, and screening of disposal facilities:

Solid waste disposal will be handled by private contractors. The disposal facilities (dumpsters and compactors) will be internal and screened from public view.

5.2.3.16 Description and location of all proposed mechanical and electrical system components including exhaust and ventilation system, transformers and satellite dishes:

Mechanical equipment access where required by code is located along the exterior of the perimeter of the building. All mechanical spaces will be architecturally treated as an inherent part of the building design. Service access will be within the parking garage. Mechanical equipment located on the roof will be located as far back from the edges to avoid sightlines from the street.

5.2.3.17 Locations of and adequacy of existing and proposed on-site public utilities, facilities, and conditions (water, sewerage, and drainage), showing size and direction of flows:

Please refer to the Existing Conditions Plan of Land, the Grading, Drainage, and Erosion Control Plan, and Utilities Plan in the Section H-I for existing and proposed utilities, respectively. The design information of utilities is contained in the "Utility Design & Management" section of this application.

5.2.3.18 Demolition and construction procedures including impact mitigation measures; an estimate of the time period required for the completion of the development:

The Project does not involve any building demolition. The Applicant anticipates commencing site preparation and utility relocation work for the XMBLY roadways in the summer of 2019. 100% Roadway Plans (Road K and Road L) will be submitted by the Master Developer to the City for approval and is anticipated to be constructed in conjunction with this Project. Work for this Project is anticipated to be complete by mid-to-late 2021.

5.2.3.19 A traffic study including estimated peak hour traffic volumes generated by the proposed use in relation to existing volumes and projected future conditions or, if the project is 25,000 square feet or more, a traffic impact analysis which is prepared by a professional traffic engineer:

This application contains a Section E: *Transportation,* which includes the Traffic Impact Study has been prepared as part of this SPSR-A application. The analysis conducted as part of that assessment does indicate that there will be increased trip generation during the weekday morning and evening peak hours because of the proposed development. The study documents how these changes are appropriately accommodated by the surrounding transportation infrastructure.

5.2.3.20 General summary of existing and proposed easements or other burdens now existing or to be placed on the property:

Existing easements as currently constituted are shown on the Existing Conditions Plan of Land, found in Section H-I. There will be appropriate easement agreements between the Applicant, the City, and various utility companies. To allow for flexibility in building and potential outdoor seating and dining, the Applicant anticipates coordinating proposed access easement and right-of-way dedication with the, private utility companies, the City and Master Developer through the 100% roadway design submission and subdivision plan of land process. Roadways within the Project are anticipated to be dedicated as public rights-of- way to the City. The Master Developer, the Applicant and the City anticipate executing an easement of use of public sidewalk agreements.

5.2.3.21 Wetlands, ponds, and surface water bodies, as defined under the Wetlands Protection Act, M.G.L. chapter 131, Section 40, and rules promulgated there under, 310 C.M.R. 10.00:

There are no wetlands on the Project Site that will be altered by the Project.

5.2.3.22 Photographs of at least eight (8) by ten (10) inches, showing the development site and surrounding parcels:

Site photographs showing current conditions are included in the Section C of this report showing the Site from the northerly, easterly, southerly, and westerly directions and the surrounding uses.

5.2.3.23 Names and addresses of all property owners within three hundred (300) feet of the site boundaries:

A check requesting a copy of the Certified Abutter's list from the City of Somerville is included with the application.

4.2 ARTICLE 6: ESTABLISHMENT OF ZONING DISTRICTS

6.4.6. Dimensional Requirements. ASMD Table of Dimensional Requirements

The Project Site is located within a PUD-A district and per Section 6.4.6 – Assembly Square Mixed Use District ("ASMD") Table of Dimensional Requirements – the Project Site is located more than 350 feet from the Mystic River Bank. The 1,000-foot setback from an MBTA Orange Line entrance runs through the site, the maximum building height allowed for the Project is 250 feet.

Table 4-2 Zoning Compliance Program Table

Requirement	Allowed/Required within a PUD-A	Proposed	Status
Minimum Lot Area	20,000 SF	71,935 SF (1.65 ± acres)	Complies
Floor Area Ratio	10.0	3.99	Complies
Building Height	250′	84′-11″	Complies
Min Lot Area/Dwelling Unit: 10 or more units (SF)	No Minimum	219	Complies
Total Open Space (SF)	25%	37.1%	Complies
Useable Open Space (SF)	12.5%	17.6%	Complies
Min. Yard Setbacks	No Minimums	1.98	Complies
Vehicle Parking	344	188	*Waiver Requested*
Loading Spaces	4	1	*Waiver Requested*

6.4.7. A *Development Standards and Design Guidelines for Developments in the ASMD*

A.1) *Transportation Analysis.* All new developments shall conform to the requirements set forth in any Transportation Study, subject to the approval of the SPGA.

A traffic narrative is included as part of this SPSR-A submission package entitled, *Transportation*. The updated analysis conducted as part of this submission indicates that the overall Project trip generation will increase on weekends, and on a weekday daily basis. However, the capacity analysis conducted as part of that assessment indicates that the additional traffic generated by the Project during the weekday morning and evening commuter peak hour can be accommodated by the surrounding transportation infrastructure. This transportation analysis is

consistent with the one submitted as part of the XMBLY PUD-PMP submission, approved on June 7, 2018.

A.2) *Parking Requirements.* Developments shall meet the parking requirements set forth in Section 9.16.

The Project as presented in the PUD-PMP will meet the minimum and maximum parking requirements set forth in Section 9.16. The Ordinance requires XMBLY to provide a minimum of 1,487 total parking spaces. The XMBLY development currently proposes 1,659 total structured parking spaces, 34 surface parking spaces resulting in up to 1,693 total Project parking spaces. The proposed parking, as part of the XMBLY master plan development, will be shared between the multiple development blocks and parcels.

Section 9.16 requires the Project to provide 344 total parking spaces within The Project building, and the Project is proposing 188 residential parking spaces. The remainder of the required spaces will be provided by on-street parking, and the structured parking garages at the other proposed XMBLY buildings. As a result, a parking waiver is being requested during the SPRS-A process for The Project. Designated residential parking spaces will not share parking with other XMBLY Blocks.

As encouraged in Section 9.16.3, the Applicant is proposing a shared loading approach for the retail/restaurant and residential uses. By allocating less ground floor space to loading bay spaces, more ground floor area is available for uses that will further the lively pedestrian-friendly atmosphere envisioned for the district. The Project design includes one loading space located entirely within the footprint of the building. VHB has calculated that the minimum loading need for Alta XMBLY building would be 4 loading spaces. Only one loading space is proposed because the bay will be primarily used for residential move-in's and supply deliveries that are likely to be from smaller trucks and short-term deliveries will be able to occur with small vans simultaneously that can utilize one loading space. A waiver from the loading bay requirement stated in Section 9.16 and Section 9.7 and as described in Section 16.5.5 is sought.

A.3) *Landscaping Requirements.* Developments shall conform to the applicable landscaping requirements set forth in Article 10. Open spaces shall be contiguous to the extent practical, in the opinion of the SPGA.

The Project building was laid out along the lot line. The Project will include landscaping in the form of street trees and raised planting beds conforming to the requirements set forth in Article 10 and is consistent with the approved XMBLY PUD PMP. In addition to the public streetscape, the Project includes landscape space provided on the third-floor roof deck. Landscape amenities include trees in raised planters, planting on deck, a flexible-use artificial turf area, seating and gathering areas, and a pool deck. The landscaping and sidewalk design are shown on the Site Plans and Landscape Plans found in Sections H-I and H-II of this application.

A.4) *Pedestrian Connections.* Continuous pedestrian connections shall be supported between all major points of pedestrian activity on the Development Site, including, but not limited to, connections to the Mystic River waterfront, connections to all public and private ways abutting the Development Site, and any transit stops. Developments shall support improved access.

The open space, pedestrian pathways, and sidewalk connections to be provided as part of the Project, will be designed to complete and improve connections with the existing network of parks and pathways. This will include improving the connection between Assembly Row, the Mystic River area, and development to the west of the Kensington Underpass and I-93.

The proposed design will allow pedestrian access to the ground floor retail or restaurant spaces on the Grand Union Boulevard, Revolution Drive, Road L, and Road K sides of the building. All four sides of the building will have continuous pedestrian sidewalks to the Assembly Row Development to the East. The sidewalk and landscape design creates an inviting and open pedestrian environment for tenants and visitors which is consistent with the approved XMBLY PUD PMP.

B) *Design Guidelines.* In reviewing a Development of more than 10,000 square feet, the SPGA/DRC shall consider the following design guidelines. These guidelines are intended to serve as a general basis for the SPGA and Applicant alike to discuss the design merits of a Development, but are not intended to inhibit design creativity when the application otherwise conforms to all other substantive review criteria. These guidelines are not intended to discourage innovative architectural design solutions. Rather, they provide general standards for the massing, siting and articulation of Buildings for developers and architects to work from. They also

provide parameters for dialogue between the Applicant and SPGA on design issues for Developments. These Guidelines are intended to supersede the guidelines set forth in Section 5.2.4. It is understood that existing Buildings and Structures will not be able to comply with all of the following Guidelines:

B.1) *Street and Sidewalk Design*. Street and sidewalk design shall be based on the Assembly Square Public Realm Design Guidelines and applicable engineering standards, provided that any street shown in such Guidelines as running through an existing Building is not required to be constructed until such Building is demolished.

The Project does not include construction of any new streets. It will include sidewalk construction. Details regarding new sidewalks surrounding the proposed Project building can be found in the Civil Site Plans, found in Section H-I. The streetscape design is based on the XMBLY PUD PMP, which was developed in response to the ASQ Public Realm Design Guidelines. The recently completed conditions at the nearby Assembly Row and the Assembly Row Design Guidelines have been incorporated into the Project design.

B.2) *Building Design*. Buildings shall be designed to the highest architectural standards and shall be sited appropriately on the Lot. Specifically, all construction shall:

B.2.a) Be located to create a presence on existing street edges or along major internal circulation routes. Maximum building setbacks of five feet shall be encouraged, except in special circumstances, where greater setbacks would enhance the pedestrian-friendly experience of the ASMD, such as dedicated open space. Buildings shall be located to reinforce both existing and future circulation patterns that may serve more than one Site:

The Project proposed is an 8-story building totaling 343,360 GSF. The Project fronts Grand Union Boulevard and Revolution Drive to the southeast, the proposed "Road L" to the north, and the proposed "Road K" to the west. The Project consists of a three-story podium (two stories of garage/mixed use and one story of residential units) with five stories of residential units above. The ground floor is a mixed-use of active use/retail, lobby, leasing, residential townhomes, bike storage, and parking. Approximately 10,823 sf of retail space will be provided at key locations at the ground floor including at the corner of "Road K" and Revolution Drive, along Revolution Drive, at the corner of Grand Union and "Road L", and parallel to the future park along "Road K". Further activation along "Road K" facing the future park includes five (5) residential townhomes which will have direct access from the sidewalk. Garage entry, transformer vaults, and loading area will be accessible along "Road L" and will support approximately 188 vehicles. Revolution Drive will provide access to the bike storage, bike workshop, and active use / retail spaces. Access to the remainder of mechanical spaces at the ground floor will be accessed internally. Two lobbies support the activation of the ground level; the main lobby is located to serve as a "gateway" opportunity at the corner of Grand Union Boulevard and Revolution Drive, while the secondary lobby faces internal to the Site activating the corner of "Roads K and L". The upper six stories consist of 324 residential units, 6,393 +/- sf of amenity space, and 10,538 +/- sf of internal courtyard. The upper floors will consist of a mix of units ranging from studios up to three-bedroom units. Sixty-Six (66) units (20%) will be provided as affordable units within the Project. See Section H.VI figures A.1 through A.7 for additional information.

B.2.b) Create interesting entrance areas that are visible and directly accessible from major public access points, streets and circulation patterns. Extensive areas of glass and window, providing visual access to interior uses, shall be part of all street facades and will accompany building entrances. Multiple and frequent entrances oriented to streets are encouraged. Building entrances shall be clearly defined, through the use of elements such as canopies, porticos; overhangs, peaked roof forms, arches. Entries set back from the street shall have outdoor patios, tile work, moldings, integral planters or wing walls with landscaped areas, or places for sitting:

The exterior façade is composed of an array of materials that aim to provide visual interest and that will highlight major public access points for residents and pedestrians. The three-story podium has a mix of storefront glazing, masonry accents, cementitious panels, and punched openings. The storefront glazing at the podium level provides visual access to the interior uses along the perimeter of the building. Active use/retail entries are framed with horizontal cementitious panels in the field of the building and masonry at the corners. Horizontal cementitious panels act as wayfinding for the pedestrians at the ground plane by framing active use/ retail locations. The horizontal panels extend from the base to the upper floors. Two lobbies provide access to the residential units above the podium. The main lobby is located at the corner of Grand Union Boulevard and Revolution Drive with the secondary lobby activating the corner of "Roads K and L". The canopy at the north lobby was designed to tie in with the above facade and give hierarchy to the Gateway Corner. The townhome entries along "Road K" are recessed back from the main building façade to differentiate them from the active use/retail. To further distinguish the townhouses from the rest of the building a modified brick palette was introduced. At the top of the townhouses a unique brick header helps distinguish the base from the middle of the building. At the entries landscaped planters create a boundary between the public and tenant circulation paths. The assistance of landscaping is in compliance with the City of Somerville Zoning Ordinances.

B.2.c) Clearly define the pattern of bays, rhythms, and dimensions to create continuous visual interest and variety in the design of all faces:

The Alta XMBLY parcel occupies the second largest footprint of the approved XMBLY PUD-PMP parcels. Alta XMBLY will act as the cornerstone for the rest of the XMBLY-PUD and will be the first parcel to break ground. To breakdown the overall mass we have chosen to treat the parcel as a city block. Each façade is broken down into individual building masses that provide differentiating patterns, rhythms, and

continuous visual interest. Each mass is further broken down into three key components: base, middle, and top to create visual interest, variety, while adhering to the approved Design Guidelines. The base or podium of the building is emphasized with rhythms of masonry, cementitious panels, precast, and glazing to allow for visual access into the active use/retail and lobbies. A brick header above the storefront glazing and punched openings create a horizontal plane that defines the base. As masonry extends up-ward it begins to define the middle of the building. To differentiate the middle from the top of the building a brick header was introduced that creates a horizontal plane and a transition point for the cementitious material. Horizontal panels are another material used in at the base and in the field of the building to create vertical rhythms. This treatment of material is meant to act as wayfinding for the pedestrians at the ground plane to highlight active use/ retail locations. The horizontal panels extend from the base to the upper floors. A dark grey band creates a horizontal plane and a transition point to define the middle from the top of the building. This treatment of material is meant to act as wayfinding for the pedestrians at the ground plane to highlight active use/ retail locations. At the corners large format cementitious panels create vertical patterns that wrap around the building and accent color highlights each secondary corner. Five terraces are located above the townhomes along "Road K To create further visual interest in the field individual masses of the façade are setback from one another to give the building further dimension. See Section H-VI figures A.1 through A.7 for additional information.

B.2.d) Break down the overall scale of development to respond to the pedestrian-scale use of Open Space:

The façade is broken down into three key components: base, middle, and top to create visual interest and variety. The base or podium of the building is emphasized with masonry, horizontal cementitious panels, precast, and glazing to allow for visual access into the active use/retail and lobbies. These design decisions are used to introduce a distinctive base to help break down the overall height and enrich the pedestrian experience by creating horizontal and vertical datums that relates to the ground plane program. Horizontal panels extend from base of the building to the upper floors help frame active use/retail locations at the ground floor. This treatment of material is meant to act as wayfinding for the pedestrians at the ground plane to highlight active use/ retail locations. The townhome entries along "Road K" are recessed back from the main building façade to allow them to feel independent from retail. These recesses create a distinctive barrier between the pedestrian experience and townhome tenants. See Section H-VI figures A.1 through A.7 for additional information.

B.2.e) Use materials and colors consistent with traditional Buildings in the area with historic merit:

The material palette for The Project will consist of masonry, metal panel, cementitious panels, and storefront wall system at the podium floors. The upper floors will be primarily masonry, cementitious panels, metal panels, and punched windows. The colors of the building will be neutral in the fields with accent colors at key design moments. Refer to material precedent images included in this package. See Section H-VI figure A.8 for additional information.

B.2.f) Locate building equipment and service areas away from Public Ways or major interior circulation routes and provide screening. Enclose all storage of inventory unless it is completely screened from public view with architectural elements meeting these guidelines:

Mechanical equipment access is located along the exterior of the perimeter of the building. Revolution drive provides access to the fire command center. Mechanical rooms along "Road K" provides access to the water room and gas meter room. The pump room and main communications room are accessed internally. "Road L" allows access to the transformer vaults, loading, and trash/recycle pick up for the building. Grand Union provides access to our second gas meter room. Fenestration at these locations blends in with the overall base of the façade. Service access will be within the parking garage. Mechanical equipment located on the roof will be located as far back from the edges to avoid sightlines from the street.

B.2.g) Show preference for vertical integration of uses. Developments shall ensure that development patterns provide active uses on the Ground Floor that take advantage of the waterfront views and open spaces, and that add presence to public ways and sidewalks:

The base of the building is a mixed-use of active use/retail, lobby, leasing, residential townhomes, bike storage, and bike workshop which allows for visual access into the building. The integration of these program elements adds a distinct presence to the public ways and sidewalks. At the base of each of the four corners, glazing allows for visual access into the building. Retail space will be provided at the corner of "Road K" and Revolution Drive, along Revolution Drive and at the corner of Grand Union and "Road L". Two lobbies support the activation of the ground level; the main lobby is located to serve as a "gateway" opportunity at the corner of Grand Union Boulevard and Revolution Drive, while the secondary lobby faces internally to the Site activating the corner of "Roads K and L". See figures A.1, A.2, A.6, and A.7 for additional information.

Further activation is added along "Road K" which is parallel to the open space/park. The program at the ground floor will include five (5) residential townhomes and two additional retail spaces. The residential townhomes will have direct access from the sidewalk along "Road K" that are recessed back from the public way to not interfere with circulation.

B.2.h) Not have any uninterrupted or un-fenestrated length of its façade exceeding thirty-five (35) horizontal feet. Facades greater than one hundred (100) feet in length, measured horizontally, shall incorporate wall plane projections or recesses having a depth of at least three (3) percent of the length of the façade and extending at least twenty (20) percent of the length of the façade; and

The facade is broken down into three key components: base, middle, and top to create visual interest and variety. To ensure for an uninterrupted or un-fenestrated length of façade, careful consideration was taken in designing the exterior envelope. The base or podium of the building is emphasized with rhythms of masonry, cementitious panels, and glazing to allow for visual access into the active use/retail and lobbies. Masonry and cementitious piers anchor the base of the building and act as a frame to highlight key areas and help to express verticality of the façade above.

To avoid uninterrupted or un-fenestrated lengths of facade, recessed masonry piers, cementitious piers, spandrel glazing, storefront, and windows with an opaque film were added around the perimeter of the

base face to help break down the façade. The retail along "Road K" and portions of the townhomes are pulled out from the main building façade by six feet (6'-0").

The middle or field of the building is anchored by four primary corners. The primary corners of the building create strong vertical moments that wrap around the building. Five terraces are located above the townhomes along "Road K. The field of the façades are composed of individual masses with varying heights, widths, and color. To create further visual interest in the field, moments of the façade are setback to give the building further dimension. The top of the building is composed of cementitious panels that acts as a backdrop to the masses below.

See Section H-VI figure A.6 for additional information.

B.2.i) Have windows providing visual access to the interior space, arcades, display windows, entry areas, awnings, or other such features no less than seventy (70) percent of their horizontal length on all Ground Floor facades that face Public Ways or the Mystic River. Forty percent (40%) of this activated façade area on the Ground Floor of Building walls along primary and secondary streets shall consist of windows or doors meant for public entry and exit.

The base or podium of the ground floor is a dynamic façade that provides visual access and interest with the use of windows, entry areas, canopies, brick headers, signage, and other building elements. These design features allow The Project to meet the required seventy (70) percent of horizontal length along the Ground Floor façade that face public ways and forty (40) percent for activated facade along primary and secondary streets. Grand Union's ground floor design provides fifty-four (54) percent of activated façade. "Road K" which faces the proposed park/open space provides eighty-nine (89) percent of activated façade. Revolution Drive provides ninety-six (96) percent, and Road L provides twenty-nine (29) percent of activated façade. These activated facades consist of windows and doors to allow for visual access to the active use/retail and lobbies.

See Section H-VII figure A.7 for additional information.

B.3) *Parking Lot Design.* Refer to Section 9.16 for parking requirements. Parking Lots shall avoid large expanses that are unbroken by Buildings or substantial landscaped Open Spaces, as set forth in Section 10.4 of this Ordinance.

The Project does not propose any surface parking lots. All proposed residential parking spaces are located on the Site within an enclosed structured parking garage.

4) *Open Space*.

4.a) Landscaping strips required in parking areas (Article 10) shall not apply to Usable Open Space calculations.

The Project does not propose any surface parking, therefore there are no landscaping strips.

4.b) Developments are encouraged to make significant contributions to Open Space along the Mystic River adjacent to the ASMD. These contributions shall be designed and developed with special attention to the provision of wildlife habitat and contiguous migration corridors, and to help reduce the level of stormwater runoff into the Mystic River.

The Project is not located along the Mystic River, but does provide permeable surfaces, landscaping, and open space on Site, with approximately 30,688 SF (37.1 %) of on-site open space. The details for the landscaping and open space are included in Section H-VII.

The open space and landscaping design is consistent with the proposed master plan open space and landscape design as presented in the XMBLY PUD-PMP application, approved on June 7, 2018.

5) *Efficiency of Design*. Every effort shall be made to design Buildings and use materials and construction techniques to optimize daylight in building interiors, natural ventilation, energy efficiency, and to minimize exposure to and consumption of toxics and non-renewable resources and incorporate appropriate "green" design techniques. In accordance with this principle all Developments within the ASMD in excess of ten thousand (10,000) square feet shall be required to complete an Leadership in Energy & Environmental Design (LEED) worksheet and submit the worksheet to the SPGA with permit application materials. This worksheet shall be considered in evaluating whether a proposed Development meets the applicable standards set forth elsewhere in this Ordinance. However, consistency with the LEED standards shall not be a factor in whether or not to permit a Development.

The Applicant has completed a LEED worksheet for the Project and is provided in Appendix II. The LEED worksheet reflects current design assumptions and may be revised slightly as design progresses.

6) *Contributions*. Contributions for Infrastructure and Open Space related to a Development made by an Applicant to the City or its constituent agencies in other agreements or permits shall be credited by the SPGA toward any applicable requirements hereunder for a Special Permit.

The Applicant will continue to work closely with the Master Developer and City regarding potential on-and-off-site contributions to open space and infrastructure. As required by Condition # 6 of the Master PUD approval, CDNV Assembly LLC and the OSPCD Economic Development Director must execute a covenant prior to Applicant applying for its SPSR-A, which covenant shall govern the Project and comply with these criteria. The Master Developer is waiting for initial draft of Mitigation Covenant from City of Somerville.

7) *Loading Spaces*. To the extent possible, loading spaces shall be located away from major Public Ways, the Mystic River and other highly visible locations. Every effort shall be made to incorporate creative design to reduce the negative visual impacts of the Loading space.

The Project proposes one loading space within the proposed building footprint. One loading space for residential uses meet the size requirements and is located west of the garage entrance and accessed on Road L. By allocating less ground floor space to loading bay spaces, more ground floor area is available for uses that will further the lively pedestrian-lively atmosphere envisioned for the district. A waiver is requested for the required loading spaces provided for the Project.

6.4.12. *Powers of the SPGA in the ASMD*. In the ASMD the Planning Board shall serve as the Special Permit Granting Authority (SPGA). The SPGA may approve, approve with conditions, or deny any application for a SPSR-A, or a PUD-A after consideration of the criteria set forth above and criteria set forth in any other Sections of this Ordinance referred to herein. The SPGA shall administer Site Plan Approval-A for Priority Permitted Uses as set forth in Subsection 6.4.11 above.

A) *Relief from Requirements.* Notwithstanding any other provisions of this Ordinance, the SPGA may, as part of an application for a SPSR-A, a PUD-A or Site Plan Approval-A grant relief from Development Standards, and any other requirements of the ASMD outlined in Sections 6.4.6 through 6.4.11. In such cases, in granting such relief, the SPGA must find that:

A.1) Strict enforcement of such standards or requirements would run counter to achieving the objectives of the Assembly Square District Plan (the "ASD Plan");

A list of requested waivers for the Project are included as part of Section B of this application.

A.2) The application is substantially consistent with the objectives of the ASD Plan and advances the objectives of the ASD Plan;

The Project will achieve the objectives of the ASD Plan by developing a true mixed-use program, incorporating pedestrian and transit-oriented planning, and creating a series of new pedestrian-oriented public spaces, while minimizing environmental impacts by locating development on previously paved and/or otherwise disturbed land.

Though the heights of the other buildings within the XMBLY development vary from the requirements as defined in the ASD Plan, thought was given to building program, site orientation and adjacent context when determining the building heights. The Project complies with the zoning height requirement and is consistent with the master plan development presented in the XMBLY PUD-PMP submission, approved on June 7, 2018.

A.3) In the case of any Alteration of a Nonconforming Structure, a Change of Nonconforming Use, or a Major Amendment to an Approved PUD, such alteration, change or amendment shall conform, to the extent feasible, to the objectives of the ASD Plan; and

This section is not applicable to the Project.

A.4) In the case of waivers from the landscaping requirement, the SPGA must determine that such a level of landscaping is incompatible with the objectives of the ASD Plan.

This section is not applicable to the Project.

B) *Exceptions.* Notwithstanding the foregoing, the SPGA may not grant relief from any of the following standards, guidelines or requirements:

B.1) Section 6.4.8, regarding Large Developments being developed pursuant to the PUD-A provisions of Article 16 unless as part of a Priority Development Process; and

This section is not applicable to the Project.

B.2) Section 6.4.8.D.2 regarding a Large Retail Project providing a non-retail component.

This section is not applicable to the Project.

4.3 ARTICLE 7: PERMITTED USES

7.11. Table of Permitted Uses

The following are uses that the Applicant may request relief with regards to the Project. Please note that a majority of Retail Uses are Allowed Uses in the ASMD at less than 10,000 square feet of gross floor area and a majority of Restaurant Uses are Allowed Uses in the ASMD at less than 5,000 square feet of gross floor area.

- Residential Use – Dwellings, multiple (7 or more units) – Use No. 1-1(c) - SPSR-A - Special Permit with Site Plan Review. Town Houses (4-6) – Use No. 1(d) – SPSR-A – Special Permit with Site Plan Review
- Retail Use – 10,000 sf or more of gross floor area – Use No. 9-5(c) – Special Permit with Site Plan Review

4.4 Article 13: Inclusionary Housing

13.3.1 Implementation Plan. Those developers seeking special permits with site plan review for projects subject to compliance with this Article shall submit a full, written proposal of the methods to be used in providing affordable dwelling units that conform with all requirements herein.

The Applicant has spoken with representatives from the Somerville Office of Housing and Community Development and is drafting an Inclusionary Housing Implementation Plan. With the exception of the waivers described below, the Applicant complies with the applicable zoning ordinance requirements in Article 13. The project is in compliance with the Inclusionary Housing Implementation Plan requirements.

Table 4-3 Unit Breakdown Table

UNIT TYPE	QUANTITY OF BEDROOMS	AVERAGE UNIT SF	TOTAL UNIT QUANTITY	TOTAL UNIT SF
Studio	1	555	50	27,733
One Bedroom	1	707	198	140,030
Two Bedroom	2	1,076	64	68,894
Three Bedroom	3	1,434	12	17,205
Two Bedroom Townhomes	2	1,360 SF	5	6,800 SF
Total			**329**	**260,662 SF**

4.5 ARTICLE 16: PLANNED UNIT DEVELOPMENT (PUD)

16.8.3. PUD Final Level Application

The scope of the proposed Project building application is in conformance with the previously approved Master Plan.

16.12 Denial Letter

After submission of the initial Preliminary Master Plan application, no further denial letter shall be required for modifications to, or phases of, the Master plan, or for any permit application (including an SPSR-A) related to the PUD.

4.6 PLANNED UNIT DEVELOPMENT PRELIMINARY MASTER PLAN (PMP)

APPROVAL CONDITIONS

The following represents the applicable conditions listed in *Appendix E: XMBLY (5 Middlesex Ave): PUD-PMP Conditions* within the Planning Board Decision for the PUD-PMP from June 2018. Applicable conditions shown below are those that reference SPSR-A within the Timeframe for Compliance.

Condition 2: The approval of this PMP shall be approval of the width of roadway and rights-of-ways. For each street, 100% street design plans, consistent with the PMP and the City's Complete Street Ordinance, must be filed with the City Engineer, Traffic and Parking Director, Transportation & Infrastructure Director and Planning Director for review and compliance with city standards and sound engineering practices. Applicant shall provide detailed roadway marking plans and cross sections, including bicycle and pedestrian design details (markings, signals, crosswalks, street furniture's, etc.) Bike lanes shall be provided as determined by the City's Transportation & Infrastructure Director. All modes must be considered and accommodated in these details, and NACTO minimum accommodations incorporated. [*Timeframe for Completion: Continuous*.]

As required by condition # 6 of the Master PUD approval, CDNV Assembly LLC and the OSPCD Economic Development Director must execute a covenant prior to Applicant applying for its SPSR-A. The covenant shall govern the overall Project development and expected to be finalized before the building is permitted for construction. The Owner/Applicant continues work with the City staff and comply with all City ordinances during the design review and submission of roadway 100% design plans.

Condition 6: Applicant shall, per the agreement made with the OSPCD Economic Development Director, sign a covenant prior to the first SPSR-A application, which indicates that the amount provided towards public benefits and improvements. This is in addition to any required linkage payments per Article 15, on-site inclusionary zoning per Article 13, and the required provision and maintenance on land owned by the applicant. The covenant shall indicate that a portion of the total improvement may be provided by the applicant completing in-kind work. Unless otherwise permitted by the covenant, the funds may be dedicated to infrastructure upgrades of public property in and around Assembly Square, and shall include a substantial portion of the funding towards: a) improvements to Draw 7 and/or Foss Park; b) lighting and other improvements to the Kensington Underpass; c) highway sound barriers; and, d) improvements to transit infrastructure. *[Timeframe: Prior to submission of first SPSR-A]*.

The master developer and the City of Somerville have reached an agreement in principal and are working toward formalizing the terms in a covenant. The Master Plan Developer is waiting for initial draft of Mitigation Covenant from the City of Somerville.

Condition 9: Prior to acceptance by the City, any civic space, thoroughfare, or utility and the land upon which or within which it is located that is to be conveyed to the city must be certified by the Applicant to meet all Federal, State, and local environmental laws and other standards as they are applied at the time of conveyance. The Applicant is responsible for the preparation of all documentation necessary for the conveyance of these facilities to the City.

The Owner has begun the process with the City to create subdivision plan of land for Planning Board approval and will file with the Middlesex Registry of Deeds. Once the subdivision of land is complete, the Owner will begin the process of the design and approval of public ways that will be conveyed to the City. The Owner will ensure such land complies with all Federal, State, and local environmental laws and other standards at the time of conveyance.

Condition 10: The Applicant must contact the Engineering Department to obtain a street address prior to an SPSR-A application for the individual buildings *[Timeframe: Prior to submission of first SPSR-A]*.

The Owner/Applicant has contacted the Engineering Department to obtain a street address (290 Revolution Drive).

Condition 11: The applicant will submit a plan amendment to subdivide all public roadway right of way from development blocks, to be approved by the Planning Board, per the SZO, and filed with the Middlesex South Registry of Deeds. Any minor plan changes to this initial subdivision will be reviewed for approval by the Planning Director and Director of Transportation & Infrastructure as a minor plan change *[Timeframe: Prior to submission of first SPSR-A]*.

The Owner has continued to progress the process of creating a subdivision plan of land for Planning Board approval and has had numerous meeting to review right of way layout with City Staff. The Master Developer will continue to work with the City towards an approved subdivision plan and will file with the Registry of Deeds.

Condition 12: Applicant shall be required work with the Planning Director, City Engineer, and the Fire Chief as necessary, to rename the new thoroughfares. The Applicant may suggest names but should involve the Ward Alderman with the previously mention department directors, and note that street names that are the same or similar to names already used in Somerville shall not be permitted. *[Timeframe: Prior to submission of first SPSR-A]*.

The Owner/Applicant has contacted the City to provide street names to the new thoroughfares.

Condition 16: SPSR-A applications under the PMP shall include information required to ensure compliance with this PMP decision, including but not limited to information noted as required in the findings (Appendix A, B, C and D) [*Timeframe: Addressed with each SPSR-A application*]

The SPRS-A application report addresses the applicable PUD-PMP findings. See Section H-VI figure A.1- A.7 for additional information.

Condition 19: As a part of the continued effort to shift travel away from private cars, the Applicant shall provide sheltered and secure bike storage facilities in strategic locations, with each SPSR-A application *[Timeframe: SPSR-A].*

The SPRS-A application provide 111 bicycle spaces within the bike storage within the structured parking lot.

Condition 20: Screening of above-ground parking from any thoroughfare, access easement, sidewalk, civic space, or open space by walls, screening, artwork, fences, planting or other means, must be specified in detail and approved by Planning Staff and the DRC *[Timeframe: SPSR-A]*.

The SPRS-A proposes structured parking interior to the building. The elevations of the building are designed as a complete building without parking visible to the exterior on any street.

Condition 26: The Applicant will be responsible for the initial cost of parking meters and cost of construction/installation of the parking meters in coordination with and to the standards of the Director of Traffic & Parking and the City Engineer. *[Timeframe: SPSR-A]*.

The Owner/ Applicant is working with the City to layout parking on Road K and will coordinate with the Director of Transportation & Infrastructure, the Director of Traffic & Parking, and the City Engineer regarding the installation of parking meters or pay station kiosk.

Condition 29: The Applicant must submit a revised MMP to the Director prior to the submittal of any SP, SPSR, DSPR applications for individual buildings. The revised plan must provide an updated Mode Split/Trip Generation analysis using the Transportation & Infrastructure Division's required methodology and Average Vehicle Occupancy and Mode Splits from the Means of Transportation to Work (B08301) data for Census Tract 3398.01 from the U.S. Census 2016 5-year Estimates. *[Timeframe: SPSR-A]*

The Owner has submitted a Revised MMP within this application see Section E: Transportation of the application report.

Condition 31: The property owner of Block 21, Block 23, Block 25, and Block 26 must submit a MMP in accordance with the Director's submittal requirements prior to or simultaneously with the development review application (SP, SPSR, DSPR) required for each site *[Timeframe: SPSR-A]*.

The Applicant is submitting a MMP supplemental to this SPSR-A, see Section E: Transportation.

Condition 37: Infrastructure must be designed to meet all requirements and standards of the City of Somerville and its relevant departments (including, but not limited to, the City Engineer, Department of Public Works, Inspectional Services, Traffic & Parking, Fire Department, and the divisions of the Mayor's Office of Strategic Planning and Community Development) and all other legal requirements for the installation of services within public rights-of-way. Subsequent SPSR-A applications must include reasonable written evidence establishing that such infrastructure is sufficient to support the proposed development, that all details are designed to City standards, that installation, unless otherwise included in capital project work of the City, is done without cost to the City, and that installation will be functionally adequate and completed at the appropriate time in the course of the phases of development *[Timeframe: SPSR-A]*.

Infrastructure is designed to meet all the City's requirements and is provided as preliminary design within this submission. 100% design plans will be submitted to the City for approval and building connection will be verified during the building permit application. Please see included with this SPRS-A application, see Section F: Utility Design and Management and Section G: Stormwater Memo.

Condition 38: All new sidewalks will be installed by the Applicant in accordance with the specifications of the Director of Transportation & Infrastructure and the City Engineer. *[Timeframe: SPSR-A]*

The sidewalks will comply with the City's specifications and are shown as part of this SPSR-A application. See Section H-I for more information. The sidewalks along the surrounding roadways (Road L and Road K) will be included in the future Roadway ROW Subdivision Review. The Owner is in the process of developing that submittal with the City.

Condition 40: Applicant shall provide individual calculations to determine the sizes necessary for the water connections to each property. The proposed service connections to each of the new buildings shall be shown on further design drawings *[Timeframe: SPSR-A]*.

The applicant will provide detailed utility plans as building design development progresses and fixture counts are finalized.

Condition 41: Design and construction phasing of the stormwater management system shall be subject to review and approval by Engineering and the Director of Sustainability & Environment to ensure compliance with City standards and best practices for design and ongoing maintenance *[Timeframe: SPSR-A]*.

Included with this SPRS-A application are Section H: Civil Site Plans, Section F: Utility Design & Management and Section G: Stormwater Management Summary pertaining to The Project.

Condition 42: Applicant shall provide a detailed soil erosion control plan with each SPSR-A application and prior to construction *[Timeframe: SPSR-A/Building Permit]*.

Provided in Section H: Civil Site Plans of this application is an erosion control plan.

Condition 48: Each individual building provide interior disposal and storage systems for trash and recycling with locations clearly indicated on site plans. Storage areas shall be inside of the structure and screening or loading dock doors must be designed as an integral part of the architecture and the building elevation and remain closed unless in active use [Timeframe: Addressed with each SPSR-A application*].*

A trash chute is provided in a separate room located on each residential floor where residents will dispose of their trash and recycling. A central trash and recycling room is located on the ground floor of the building along Road L and screened from public view. Solid waste disposal will be handled by private contractors and pickups will be scheduled accordingly. Retail tenants will have access to the trash and recycling room.

Condition 49: Any transformers should be located as not to impact the buildings or landscaped area, and shall be fully screened to the extent permissible by code. *[Timeline: SPSR-A*].

Mechanical equipment access is located along the exterior of the perimeter of the building and screened from public view. Service access will be within the parking garage. Mechanical equipment located on the roof will be located as far back from the edges to avoid sightlines from the street. Transformers have dedicated space interior to the building.

Condition 50: There shall be a minimum of one tree for each 1,000 sf of required landscaped area under SZO §10.3 installed and maintained in compliance with the American Nurserymen's Association Standards and in accordance with the City Arborist. *[Timeline: SPSR-A*].

The Owner /Applicant is dedicated to this condition and will contribute as part of the overall masterplan requirements

Condition 51: Signage shall be subject to separate review and approvals by the Design Review Committee and the Planning Board, as required and customary. *[Timeline: SPSR-A*].

The Owner/Applicant is has shown schematic signage on the architectural elevations located in Section H. The Owner/Applicant shall formally submit for review and approval by the Design Review Committee and the Planning Board the required documentation for signage at a later date.

Condition 54: To the extent possible, all exterior lighting must be confined to the subject property, cast light downward and must not intrude, interfere or spill onto neighboring properties*[Timeline: SPSR-A*]

Outdoor lighting will be provided to meet code requirements. Exterior street fixtures will match the City of Somerville Assembly Row Roadway streetscape standards.

Condition 55: As part of each site plan review submittal, the Applicant shall provide calculations showing that the percentage of open space and usable open space meets the zoning requirement for a PUD-A within the ASMD. *[Timeline: SPSR-A*]

Open space figures and calculations are provided in Section H-VII.

Condition 56: Applicant shall ensure that all trees meet the species, caliper, well size, and planting specifications of the City Arborist. *[Timeline: SPSR-A*]

The Applicant will ensure that all landscape design complies with the specifications of the City Arborist.

Condition 57: Each subsequent SPSR-A application submitted under this PUD-PMP must identify vulnerabilities and/or risk for each parcel based on the City's Climate Change Vulnerability Assessment. The application should clearly identify the extent and nature of planning/design interventions necessary to mitigate those risks. To ensure effective strategies for resiliency by preparing for weather and flooding impacts, the Director of the Office of Sustainability & Environment shall define specific appropriate expectations for responses to this condition, and the applicant shall provide these responses with each PUD-PMP application. *[Timeline: SPSR-A*]

A Sustainable and Resilient Building questionnaire and narrative explaining responses is included in Appendix of the application report. The Questionnaire and LEED Narrative describe the design extent to mitigate climate change. See Appendix II for more information.

Condition 58: Each subsequent SPSR-A application submitted under this PUD-PMP must document how the proposed development, including civic spaces, public realm improvements, and buildings, will help to reduce the urban heat island, assist in the City's stated objective to be Net Zero by 2050, and assess whether the infrastructure presents an opportunity for reducing demand and/or district energy solutions. *[Timeline: SPSR-A*]

A Sustainable and Resilient Building questionnaire and narrative explaining responses is included in Appendix of the application report. The Questionnaire and LEED Narrative describe the design. See Appendix II for more information.

Condition 59: Each subsequent SPSR-A application submitted under this PUD-PMP must submit the necessary LEED worksheets along with narratives explaining the methods of compliance with each point achieved *[Timeline: SPSR-A*].

A LEED worksheet and explanatory narrative is included in Appendix I of the application report.

Condition 60: Applicant shall provide material and color samples for all exterior cladding, trim, windows, and doors to Planning Staff and the Design Review Committee for review, comment, and approval as part of the review required with each SPSR-A application. *[Timeline: SPSR-A*]

The material palette for The Project will consist of masonry, metal panel, cementitious panels, and storefront wall system at the podium floors. The upper floors will be primarily masonry, cementitious panels, metal panels, and windows. The colors of the building will be neutral in the fields with bold accent colors at key design moment's. See the architectural plans in Section H for more information.

Condition 62: Where sides or backs of buildings face a civic space, they must incorporate (physically or visually) strategies that address the public frontage and impact of these spaces. These strategies need not be related to retail spaces or functional entrances, and can be small in scale. But, these spaces should be ambitious, active and should encourage creativity and engagement. These spaces may include, but are not limited to, public art installations or display cases for artwork, large scale supergraphics or murals, green walls, and/or artist/maker space, etc. *[Timeline: SPSR-A*]

The façade is broken down into three key components: base, middle, and top to create visual interest and variety. The base or podium of the building is emphasized with rhythms of masonry and cladding with glazing to allow for visual access into the active use/retail and lobbies. The townhome entries along "Road K" are recessed back from the main building façade to allow them to feel independent from retail. Cornices frame the base and top of the townhome entries with the assistance of landscaping. The middle or field of the building is anchored by the four primary corners. The primary corners of the building create strong horizontal rhythms that wrap around the building. An array of Juliet

balconies and terraces fill the façade to provide continuous visual interest. The field of the façades are composed of vertical rhythms. To create further visual interest in the field moments of the façade are setback to give the building further dimension. The top of the building is located above the primary corners with a contrasting material that creates horizontal rhythms.

Condition 63: A draft Affordable Housing program must be provided by the Applicant showing the anticipated affordable units - types and sizes - in each DSPR application

The Applicant has spoken with representatives from the Somerville Office of Housing and Community Development and is drafting an Inclusionary Housing Implementation Plan. With the exception of the waivers described below, the Applicant complies with the applicable zoning ordinance requirements in Article 13. The project is in compliance with the Inclusionary Housing Implementation Plan requirements. The applicant anticipates provides unit break down in in Section 4.4 of the Zoning Compliance narrative.

E - Transportation Narrative

Transportation

This current transportation evaluation builds upon the prior extensive transportation analyses[1] conducted for the Planned Unit Development Preliminary Master Plan (PUD-PMP) for the XMBLY development located at 5 Middlesex Avenue in Somerville, Massachusetts.

This section provides an evaluation of the new Block 23 development for WP East Acquisitions, LLC, which will include approximately 329 new residential apartment units and approximately 10,823 square feet (sf) of supporting street-front retail/restaurant space (the "Project"). The specific potential traffic impacts associated with this current development project, as described in the following section, is also evaluated as part of this current assessment. The Project name is now "Alta XMBLY" and addressed as 290 Revolution Drive, Somerville, Massachusetts.

Proposed Alta XMBLY Development Program

The Alta XMBLY development will be constructed within an approximately 1.7-acre parcel of land within the planned XMBLY development in Somerville, Massachusetts (the "Site"). This initial XMBLY development will occur within Alta XMBLY, which is bound by Grand Union Boulevard to the east, the planned Road K to the west, and the planned Road L and Revolution Drive to the north and south, respectively. A total of 329 residential units are proposed within the planned eight-story Alta XMBLY building, along with 10,823 of street-level retail/restaurant use. The parking needs for this parcel will be accommodated by 188 structured parking spaces within the new Alta XMBLY building footprint. This parking will be designated for use by residents only, with parking for the retail/restaurant uses being provided on-street along Road K, and other nearby roadways where public parking is available. The proposed Site parking supply falls below the 342-space supply required by the City of Somerville Zoning Ordinance, but still will meet the anticipated functional needs of the proposed Project. A waiver from this parking requirement is being requested in conjunction with this submittal.

[1] XMBLY PUD-PMP, Traffic Impact and Access Study, VHB (Watertown, Massachusetts) March 2018.

The proposed development for Alta XMBLY is consistent with the recently approved PUD-PMP for the overall XMBLY development. The anticipated trip generation associated with this proposed development is discussed in detail later in this evaluation.

Vehicular Access and Circulation

The Project Site is bound by Grand Union Boulevard and Revolution Drive to the east and south, and the newly proposed Road K and Road L to the west and north, respectively. With the Site being bound by theses existing and planned roadways, there will be multiple options for automobile traffic entering and exiting the overall Project site. The planned Road K will connect to Foley Street to the north, and to Revolution Drive to the south. Road K will intersect Foley Street opposite the K-Mart Driveway on the opposite side of the roadway, and this location will continue to function as a full-access unsignalized intersection. Road K will continue to the south through the Site where it will intersect Revolution Drive opposite the existing Home Depot driveway. To enhance access at this location, a new eastbound left-turn lane will be constructed within the existing Revolution Drive median to accommodate entering left-turns into the Project Site. This intersection will continue to operate at as a full-access four-way, unsignalized intersection. At its approximate midpoint, Road K will be intersected by Road L, which will continue to the east to its terminus with Grand Union Boulevard. The southerly segment of Road K between Revolution Drive and Road L has been designed to promote the shared use of this roadway by automobiles, bicycles, and pedestrians. Specifically, the roadway will be constructed at the same grade as the sidewalks along both side of the roadway. A total of fourteen on-street parallel spaces will be provided on both sides of this segment, including two standard accessible spaces. Bollards also will be installed along the street edge between the sidewalks area and edges of the parking or travel lanes.

To avoid traffic conflicts on Grand Union Boulevard, turning movements to and from Road L will be limited to right-turns only. Road L will provide access and egress for the Project's 188-space residential parking garage, and Site residents also can use Road K to travel to and from the garage.

Pedestrian/Bicycle Accommodations

As part of the planned multi-modal environment of XMBLY there will be ample pedestrian accommodations in place surrounding Alta XMBLY. Grand Union Boulevard already features 8-foot wide sidewalks along both sides of the roadway, with crosswalks provided at Foley Street to the north, and Revolution Drive to the south. Push-button actuated exclusive pedestrian phases are provided at both intersections.

A continuous 6-foot wide concrete sidewalk will be constructed along the northerly Site frontage along Road L. Street furniture and tree pits also will be provided within the approximately 16-foot wide area between the curbline and the building. A variable-width sidewalk will be constructed along the Site's Road K frontage along with ample street furniture, trees and other amenities. A continuous 6-foot wide sidewalk also will be provided along the northerly side of Revolution Drive, with additional space for street trees and landscaping. The segment of Road K between Road L and Revolution Drive is being designed to promote shared use between automobiles, bicyclists, and pedestrians. The design of this segment involves the roadway being raised to be flush with the sidewalks to help promote the desired multi-modal environment. Bollards will be provided along the roadway edge between the on-street parking and sidewalk area for added pedestrian protection.

Grand Union Boulevard currently features striped bicycle lanes on both sides of the roadway. The newly proposed Road K is being designed with single travel lanes in both directions along with parking along both sides of the street for most of its length. With its multi-modal design bicyclists and pedestrians will be able use the same street space in which automobiles will be travelling. The inherent traffic-calming nature of this segment will allow for bicyclists and pedestrians readily to utilize this same area as automobile traffic due to the expected low speeds.

The Somerville Zoning Ordinance requires 112 bicycle parking spaces for the proposed Alta XMBLY development, and this requirement will be satisfied within the proposed parking garage.

Loading

The loading needs for the Project will be accommodated by a designated 12-foot by 30-foot loading bay located to the west of the residential garage entrance on Road L. In conjunction with this submittal, a waiver is being requested for relief from the required number of loading bays. A shared loading approach for the retail/restaurant and residential uses is being utilized to maximize the amount of active street-front space. From a functional perspective, these loading spaces should readily accommodate the anticipated Site demand. Individual tenant use of the loading spaces will be for supply deliveries and should be in the former of smaller trucks as opposed to longer trailer trucks. Accordingly, some shorter-term deliveries will be able to occur with small vans simultaneously utilizing a loading area only allocated for one larger truck per the zoning standards. Most retail/restaurant deliveries should occur in the weekday morning hours. Regardless, as part of the overall Site management, deliveries being made to Alta XMBLY will be scheduled to help minimize any shared loading conflicts.

Sight Distance Evaluation

Sight distance measurements and analyses were performed in conformance with guidelines of the American Association of State Highway and Transportation Officials (AASHTO)[2] for the proposed Alta XMBLY Site driveway on Road K.

Stopping sight distance (SSD) is the distance required for a vehicle traveling along a roadway to perceive, react, and come to a complete stop before colliding with an object in the path of travel. SSD is measured along each major approach to unsignalized intersections to determine if vehicles can safely exit from a minor street or driveway approach. In this respect, SSD can be considered as the minimum visibility criterion for the safe operation of an unsignalized intersection.

Intersection sight distance (ISD) is based on the time required for perception, reaction, and completion of the desired critical exiting maneuver (a right-turn for both of the site driveways) once the driver on a minor street approach (or a driveway) decides to execute the maneuver. In this context, ISD is a desirable visibility criterion for the safe operation of an unsignalized intersection.

The required SSD and ISD for the proposed Alta XMBLY driveway were calculated using AASHTO guidelines. Table 1 summarizes the available and required sight distances.

[2] A Policy on the Geometric Design of Highways and Streets; American Association of State Highway and Transportation Officials; Washington, D.C.; 2011.

Table 1
Sight Distance Analysis Summary

	Stopping Sight Distance			Intersection Sight Distance		
Driveway	**Traveling**	**Required***	**Measured**	**Looking**	**Desired**	**Measured**
Alta XMBLY Road L	Eastbound	80 feet	100 feet[1]	Right	170′	110 feet[1]
	Westbound	80 feet	110 feet[1]	Left	170′	100 feet[1]

* Calculated sight distance based on 15 mph design speed.
1 Clear sight lines are available between the proposed Alta XMBLY driveway and Grand Union Boulevard and Road K intersections to the east and west, respectively.

As can be seen in Table 1, the measured stopping sight distances for the proposed Alta XMBLY driveway satisfy AASHTO requirements for the expected 15 mph travel speeds along this short, Road L segment connecting Road K to Grand Union Boulevard. While the available intersection sight distance technically falls below the desirable ISD levels, exiting driveway traffic from the garage has clear lines of sight looking to the east and west. While these measured sight lines fall below the desirable AASHTO levels, these are actually the measured distances from the driveway to both roadways intersecting Road L. Due to the 90-degree angle of these intersecting roadways, traffic turning from these streets will be doing so at even lower speeds so that adequate sight lines still will be available. With the proposed new building being set back sufficiently from the roadway edge, there are no physical obstructions which will impede the driver's sight lines from the Alta XMBLY driveway.

Trip Generation Summary

The trip generation analysis presented during the PUD-PMP approval process was a complex in nature due to transit use, travel by pedestrians and bicyclists, and potential trip sharing with nearby uses. Trip generation for Alta XMBLY was calculated for this assessment using the same Institute of Transportation Engineers (ITE)[3] based methodology used in the transportation analysis during the PUD-PMP approval process.

Alta XMBLY Trip Generation Summary

The unadjusted trip generation estimates for the current Alta XMBLY development proposal are summarized in Table 2 for the proposed residential and retail/restaurant uses.

▼

3 Trip Generation Manual; Tenth Edition; Institute of Transportation Engineers; Washington, D.C.; 2017.

Table 2
Alta XMBLY Trip Generation –
Total Unadjusted Trips

Time Period	Apartments: 329 units[1] +	Retail/Restaurant: 10,823 sf[2]	= Total
Weekday Daily (vpd)	1,790	410	**2,200**
Weekday Morning Peak (vph)			
Enter	29	6	**35**
Exit	81	4	**85**
Total	110	10	**120**
Weekday Evening Peak (vph)			
Enter	85	20	**105**
Exit	54	21	**75**
Total	139	41	**180**
Saturday Daily (vpd)	1,418	500	**1,918**
Saturday Midday Peak (vph)			
Enter	71	25	**96**
Exit	74	23	**97**
Total	145	48	**193**

vpd Vehicles per day
vph Vehicles per hour
1 Source: Trip Generation Manual; Tenth Edition; Institute of Transportation Engineers; Washington, D.C.; 2017. Based on ITE LUC 221 (Mid-Rise Residential), based on 329 units.
2 Based on ITE LUC 820 (Shopping Center), assumes 10,823 sf of retail/restaurant space.

The trip generation estimates summarized in Table 2 are the raw, unadjusted trips that could be generated by the proposed uses without any consideration for transit use, travel by bicycles and pedestrians, shared trips and other factors inherent within the mixed-use context of the surrounding area. Ultimately, considerable internal trip-sharing between Alta XMBLY and surrounding uses within the XMBLY site (and other nearby developments) is expected. The exact amount of trip sharing is largely depending on the amount and type of surrounding uses, both of which will be continually changing as XMBLY and the surrounding Assembly Square area continues its growth. As such, varying levels of trip sharing also expect through various time of day and on weekends.

The amount of automobile traffic generated by Alta XMBLY should be limited due to the availability of public transportation. The PUD-PMP transportation analysis for the overall XMBLY development assumed that only 43-percent of residents would be

travelling by automobile to and from the Site, but that 80-percent of the retail traffic would be in the form of automobile trips. This conservative approach was taken to help avoid any potential off-site traffic impacts from being understated. However, for this analysis, the City of Somerville's maximum desired auto mode split of 50-percent was utilized. With ample transit opportunities, and the surrounding multi-modal environment, travel by means other than automobile is now a viable option to the point where the 50-percent goal ultimately should be attainable.

Furthermore, retail uses typically attract a significant percentage of their customers in the form of "pass-by" trips consisting of vehicles already on the adjacent roadway that are attracted to a retail use when passing the Site. The primary destination of this traffic is elsewhere and the primary trip will be resumed following a stop at the proposed development. As with the PUD-PMP analysis, ITE-documented pass-by rates of 34- and 26-percent were utilized during the respective weekday evening and Saturday midday peak hours, with a 25-percent pass-by rate being used during all other time periods studied.

These factors, combined with the internal trip sharing with other nearby uses, will reduce the amount of vehicle traffic associated with the new Alta XMBLY development. Once these factors have been appropriately considered, the resulting vehicular traffic on the surrounding roadways can be estimated. Table 3 summarizes the Alta XMBLY trip generation considering internal shared trips and mode splits.

Table 3
Alta XMBLY Trip Generation –
Net New Vehicle Trips

Time Period	Total Unadjusted[1]	- Shared/Transit/ Bike/Pedestrian[2]	= Total Net
Weekday Daily (vpd)	2,200	1,386	**814**
Weekday Morning Peak (vph)			
Enter	35	22	**13**
Exit	85	52	**33**
Total	120	74	**46**
Weekday Evening Peak (vph)			
Enter	105	69	**36**
Exit	75	50	**25**
Total	180	119	**61**
Saturday Daily (vpd)	1,918	1,224	**694**
Saturday Midday Peak (vph)			
Enter	96	64	**32**
Exit	97	64	**33**
Total	193	128	**65**

vpd Vehicles per day
vph Vehicles per hour
1 Source: Table 2.
2 Source: Adjustments to trip generation based on methodology outlined in Trip Generation Manual; Tenth Edition; Institute of Transportation Engineers; Washington, D.C.; 2017.

As shown in Table 3, once transit use, internal shared trips, and travel to and from the Project Site by biking and walking are properly considered, the resulting trip generation ranges from 46 to 65 new peak hour trips. As with other developments in the area, Alta XMBLY should experience notable transit ridership as the new Orange Line Station is conveniently located roughly 1,000 feet to the east of the proposed building. Alta XMBLY traffic is expected to follow the same general travel patterns to and from the site as that summarized in the PUD-PMP transportation analysis. Once these trips have been distributed onto the surrounding roadway network this level of additional traffic should not have a notable impact on the operation of the surrounding roadways or intersections.

Traffic Mitigation Overview

The PUD-PMP transportation analysis identified several transportation-related improvements both within the Assembly Square District and in the surrounding area. These improvements have been identified to address potential traffic impacts associated with the overall XMLBLY development and, as such, will be able to accommodate the lesser traffic from the Alta XMBLY development.

The traffic study analysis indicates that depending on the nature of a given Project use, approximately 15- to 35-percent of the Project traffic will be passing through the Mystic Avenue/Broadway/Lombardi Street interchange at the southwesterly end of the Assembly Square district. This interchange was reconstructed with significant signal enhancements as part of the initial nearby Assembly Square redevelopment project. However, to help mitigation any potential traffic impacts resulting from this Project, the overall XMBLY proponent is proposing to install an adaptive traffic signal system including the following ten locations:

- Mystic Avenue (Route 38) at I-93 Southbound Off-Ramp U-Turn
- Mystic Avenue (Route 38) at Grand Union Boulevard / Lombardi Way
- Lombardi Way at I-93 Southbound Off-Ramp
- Broadway at Lombardi Way / Mt. Vernon Street
- Route 28 at Grand Union Boulevard
- Route 28 at Middlesex Avenue
- Foley Street at Middlesex Avenue
- Foley Street at Grand Union Boulevard
- Revolution Drive at Grand Union Boulevard
- Mystic Avenue at Revolution Drive

Most of these locations is currently signalized, and interconnected, so that they all are operating in a coordinated manner under peak-period conditions. However, installing the updated adaptive signal equipment will allow these signals to operate in a far more flexible, adaptive manner responding to actual traffic conditions continuously on a cycle-by-cycle basis. Adaptive signal control is a relatively new design entity, but it has been found to be very effective, and far more responsive than just relying on predetermined signal timing programs. This new system will help to minimize Project impacts while helping to address existing deficiencies in this area.

TDM Plan

Transportation Demand Management (TDM) measures are most often directed at commuter travel and implemented at office sites. However, due to the mixed-use and transit-orientated nature of the Proposed Project, there also are opportunities to bring

TDM programs to the Proposed Project's other land uses, including the residential housing retail shops, restaurants, and active uses.

As required by Condition #3 of the approved Mobility Management Plan for the XMBLY PUD Master Plan, the overall XMBLY proponent will become an active member of the Assembly Square Transportation Management Association. An overall XMBLY on-site TDM coordinator will be designated to oversee all TDM programs for each building of the XMBLY development. The person(s) in this role will coordinate with other organizations within Assembly Square to help promote a reduced reliance on single-occupant motor-vehicle travel to the Project site.

The exact details of the Project's TDM plan are detailed in the Mobility Management Plan provided as part of this Project's submittal. General TDM measures to be implemented as part of this Project will involve promoting transit use and facilitating bicycle and pedestrian travel both through site amenities and ongoing practices and programs. These will include providing bicycle racks and amenities and also may involve providing a new Blue Bikes bike-share station within the Project Site. The mixed-use nature of the site by itself also effectively will function as a TDM measure. Specifically, with the variety of uses proposed both within the Project site and in place in the surrounding area, the need to travel off-site by automobile for dining or shopping opportunities will be minimize.

Conclusion

The proposed Alta XMBLY development will involve the construction of approximately 329 new residential apartment units and 10,823 sf of supporting ground-floor retail/restaurant space. Trip generation for this development was estimated using the same ITE-based methodology utilized for PUD-PMP transportation analysis for the overall XMBLY development. The resulting trip generation is expected to range from 46 to 65 new peak hour trips on the surrounding roadway network. Once these trips have been distributed onto the surrounding roadway network this level of additional traffic should not have a notable impact on the operation of the surrounding roadways or intersections. The trip generation associated with Alta XMBLY falls within the previously estimated levels for this area, so there should not be any changes in the anticipated impacts which were considered in the PUD-PMP transportation analysis. Accordingly, further detailed traffic analyses should not be necessary for this currently proposed development.

F - Utility Design & Management

6

Utility Analysis

The following report is submitted relating to the Site Plan entitled, "Planned Unit Development, Preliminary Master Plan, XMBLY, Somerville, Massachusetts", dated March 2018.

For the Site Location Map, refer to Figure 3.1.

For existing utilities referenced in this report please refer to the drawing in the Appendix A – Civil Site Plans, entitled:

- Existing Conditions Plan of Land, SV-1, dated November 2017.
- For proposed utilities referenced in this Chapter please refer to the drawings in the Appendix A – Civil Site Plans, entitled:
- Grading, Drainage, and Erosion Control Plan, C-4, dated March 2018
- Utility Plan, C-5, dated March 2018

6.1 Study Description

This analysis describes the existing and proposed on-site and surrounding utility infrastructure supporting the proposed XMBLY development (the "Project") at 5 Middlesex Avenue, Somerville, MA (the "Site"). The Site was partially developed as part of the Assembly Square Development and its various phases. The report uses and makes references to the previously submitted Utility Analysis prepared by VHB as part of the Assembly Square Amended Preliminary Master Plan, Planned Unit Development submitted to the City in May 2014 which relied upon the Assembly Square Development Utility Analysis confirmed and updated the findings in a report by Green International Affiliates, In., ("GIA"), which analyzed for the Somerville Office of Housing and Community development ("OHCD"), all existing utilities, and future improvements within the Assembly Square Revitalization Area ("ASRA"). The GIA report was completed in November 2001 and entitled "Utility Analysis Report ("UAR") for Assembly Square Revitalization Area Somerville, Massachusetts".

Existing utilities and associated infrastructure within the Site and surrounding roadways were obtained from actual on the ground survey performed by VHB in November 2017 supplemented by additional subsurface investigations, field observation and information of record.

This report was prepared using information in the 2014 AMP-PUD submission and 2001 GIA report. This report contains all the utility existing information, data and

analyses that are valid for current conditions. This report identifies the availability and adequacy of the existing utility facilities and infrastructure that will serve Blocks 21, 23, 24, 25, and 26 of the Project.

6.2 Water Supply and Distribution

The City of Somerville owns and maintains the public water distribution system that services the ASRA. The City's water distribution system supplies both domestic and fire protection water to the area. The following sections describe the existing water system surrounding the Project Site and its capability to service the proposed development.

6.2.1 Existing

This existing water system is part of a City-wide interconnected network that is supplied by the Massachusetts Water Resources Authority ("MWRA") through seven metered connections. The City is supplied by both MWRA's high service and low service pressure systems. The water distribution system within the Assembly Square area is part of the City's low service system.

MWRA Meter 91 is located at the intersection of the Fellsway West and Middlesex Avenue and provides the closest supply of water to the Assembly Square area from a 48-inch cast iron water main located in Middlesex Fells Parkway ("Fellsway"). The City does not have any water storage facilities or any pumping stations that service this area.

The water distribution system surrounding the Site is described as follows:

- The primary connection to the MWRA meter is a 20-inch diameter cast iron main installed in 1925 by the City within and along Middlesex Avenue.
- Several branch lines of varying diameter feed off the 20-inch main between Middlesex Avenue and the Fellsway.
- A new 20-inch water main from the existing 20-inch water main in Middlesex Avenue, continues along Grand Union Boulevard to Foley Street then continues west along Foley Street to Middlesex Avenue where the new 20-inch water main is looped into the existing 20-inch water main in Middlesex Avenue. The newly constructed 20-inch main in Foley Street replaced the existing 12-inch water main installed in 1928 as part of the infrastructure improvements for the Assembly Row.
- Water mains were extended ranging in size from 8 to 20-inch, from the newly constructed 20-inch water main in Grand Union Boulevard along Artisan Way, Great River Road, Canal Street, Foley Street and Revolution Drive where they are interconnected to create multiple looped systems.

- The remainder of the system along Foley Street, Grand Union Boulevard and Mystic Avenue consist of a 12-inch diameter pipe interconnected to create several loops.

6.2.2 Required Water Demands

Projected Water Use

Estimates of water demand have conservatively been determined assuming water use is equivalent to wastewater flows calculated in accordance with Massachusetts Department of Environmental Protection ("MassDEP") Wastewater Design Flows in 310 CMR 15. However, these flows are likely to be reduced in recognition of Proponent's commitment to implement water conservation measures and maximizing water efficiency within building during the design development phase for each Block. In all cases, the City's water distribution system is anticipated to provide sufficient capabilities to meet the normal daily peak demands of the Project.

The projected water consumption rates used to calculate Maximum Projected Water Flow below assume water use to be equivalent to wastewater flows calculated in accordance with the MassDEP Wastewater Design Flow Guidelines in 314 CMR 7.15, generally as follows:

- Office Space/Lab/Research & Development: 75 gallons per day per 1,000 square feet
- Apartments: 110 gallons per day per bedroom
- Retail: 50 gallons per day per 1,000 square feet
- Restaurant: 35 gallons/seat

Because the DEP wastewater design flows are considered very conservative in relation to actual flow volumes, therefore, no increase in water consumptive rates have been applied to these figures.

Table 6-1 - Maximum Projected Water Use

Land Use	Unit – Wastewater Rate (GPD)	Total Size of Building Program	Water Use 100% of Wastewater Rate (GPD)
Office/Lab/Research & Development*	75/1,000 SF	786,000 SF	58,950
Residential	110/bedroom	674 Bedrooms	74,140
Retail	50/1,000 SF	21,000 SF	1,050
Restaurant	35/seat	238 seats	8,330
Fire Station	50/person/shift	8 people/ 2 shifts	800
Total			**143,270**

*****Program excludes the flow produced for the existing 162,000 SF office building and historic flow from the former cinema

Fire Flow Demand

The water system within the Site provides both domestic and fire flow water supply. The City's existing water distribution network within this area has, on average, fire hydrants located 300 feet apart throughout the entire area. This spacing meets the typical maximum recommended distance between hydrants in an urban setting.

The minimum Needed Fire Flow ("NFF") for MWRA Meter 91 and maximum Insurance Services Office ("ISO") requirements for a Community are:

	Fire Flowrate
Estimated minimum NFF requirements to be supplied by MWRA for meter 91:	2,000 gpm
Maximum requirements a community is required to supply according to the ISO:	3,500 gpm

The required minimum residual pressure at any location within the distribution system during a fire flow situation is 20 psi.

6.2.3 Proposed Water

A hydraulic analysis was also performed on the City water system as part of the Assembly Row PUD-PMP that indicates the existing municipal water system has sufficient capacity for existing maximum daily demands plus a 3,500 gpm fire flow demand while maintaining greater than the minimum required pressure of 20 pounds per square inch ("psi") throughout the system. Independent hydrant flow tests conducted in Foley Street verify the existing available flows, pressures, and the ability to accommodate the added load.

A fire flow of 3,500 gpm is the maximum flow a community is required to supply according to the ISO standards.

Based on VHB's analysis, the Future Maximum Day Demand and 3,500 gpm fire flow can be achieved within the Site after the proposed water improvements are constructed.

The Project proposes the following water mains and service connections:

- A proposed 12-inch water main in proposed "Road K" that creates a loop through the Site connecting the City of Somerville's 20-inch main in Foley Street to the existing 12-inch main in Revolution Drive.
- Block 21 connection into the City of Somerville's 20-inch main in Foley Street and into the proposed 12-inch main in "Road K" for domestic and fire services.

- Alta XMBLY (formally known as Block 23) connection to the proposed 12-inch main in "Road K" and to the existing 12-inch main in Revolution Drive for domestic and water services.
- Block 24, the existing building at 5 Middlesex Avenue, will maintain its existing service connections to Mystic Avenue.
- Block 25, connection directly into the proposed 12-inch main in "Road K" for domestic and fire services.
- Block 26, connection to the existing 12-inch main in Revolution Drive or into the proposed 12-inch main in "Road K" for domestic and fire services.

6.3 Sanitary Sewer

The City of Somerville Owns and maintains the sanitary sewer system in the ASRA. The sanitary sewer is a separated system with storm drainage collected in an independent system.

6.3.1 Existing

The ASRA sewer shed begins with an eight-inch sewer main at the north end of ASRA. The sewer trunk line flows from North to South within Grand Union Boulevard gradually increasing to an 18-inch at the intersection of Foley Street and Grand Union Boulevard. The trunk line continues to flow within Grand Union Boulevard towards the southern end of the ASRA, where the sewer system connects into a 24-inch pipe on North Union Street prior to discharging to the City of Somerville Regulator Manhole, which is the connection to the MWRA system.

During the permitting for the Assembly Row development, the total peak sewer flows were projected for the full-buildout of the Assembly Row development which was calculated to generate approximately 3.11 million gallons per day (MGD). The 18-inch sewer trunk line has a design capacity of approximately 5.1 MGD at a slope of approximately 0.003 with an average velocity of 5 feet per second.

6.3.2 Proposed

The average daily wastewater flows rates are based on MassDEP, title V regulation 310 CMR 15. The proposed land use areas and calculated flow rates are shown on Figure 6.1.

The existing 18-inch trunk line sewer system has adequate capacity to accept the proposed peak flows of the XMBLY Development. All four (4) proposed development blocks (Blocks 21, 23, 25, and 26) will be serviced via connections into the proposed 8-inch sewer main within "Road K" or to a proposed 8-inch sewer main flowing west to east within the proposed "Road L", and connect into the existing 18-inch trunk line in Grand Union Boulevard. The existing 18-inch sewer trunk line will have enough capacity to handle all peak sewer demands of the

Proposed Development with an excess capacity of approximately 1.0 MGD +/-. The Grand Union Boulevard sewer trunk line ultimately flows southerly within Grand Union Boulevard to a 3'3" by 3'-11" MWRA sewer interceptor near North Union Street. The MWRA interceptor conveys flow to the Charlestown Pumping Station and eventually to the Deer Island Treatment Plant. The Project will increase wastewater flows to the MWRA interceptor sewer.

6.3.3 Sewer Mitigation

The City of Somerville requires Inflow and Infiltration ("I&I") improvements for developments with greater than 2,000 GPD of sewer flow. The policy requires the proponent to remove or cause the removal of a minimum of four (4) gallons of I/I flow for each gallon of new wastewater generated. Alternatively, the City has created a mitigation fund which provides developers the option to contribute to the fund in lieu of performing infrastructure improvements. The Proponent will work closely with the City to determine the I&I mitigation for the Project through the PUD and Special Permit processes.

6.4 Stormwater

6.4.1 Existing Drainage Conditions

The Project Site was previously covered with existing buildings and parking lots or areas that were previously developed with buildings and since been demolished. The Site is generally flat, ranging from approximate elevation 9.0 feet (NGVD) to 14.0 feet (NGVD) except for the eastern edge of the Site that has a 3:1 slope up to an elevation of 14.0 feet (NGVD) to transition into Grand Union Boulevard. Much of the Site is covered by impervious parking or near-impervious surfaces with minimal landscape islands or features. Much of pervious area is found adjacent to Grand Union Boulevard. See Plan Sv-1 Existing Conditions Plan of Land in Appendix A.

The existing on-site drainage systems collect and convey stormwater runoff from the impervious areas via a closed drainage system of catch basins, pipes, and manholes, that connects into the existing stormwater infrastructure in the abutting streets. The eastern half of the Site conveys the stormwater runoff to the existing stormwater infrastructure in Foley Street and Grand Union Boulevard which flows East to the recently built 72-inch drainage outfall and ultimately discharging to the Mystic River downstream of the Amelia Earhart Dam. The western half of the Site conveys the stormwater runoff to the existing stormwater infrastructure near the intersection of Foley Street and Middlesex Avenue which flows North to the existing 84-inch drainage outfall and ultimately discharging in the Mystic River downstream of the Amelia Earhart Dam. See Figure 6.3 Existing Drainage Areas for the Site's existing drainage boundaries.

NRCS Soil Maps for Middlesex County (NRCS Web Soil Survey, 12-21-2017) show the existing soils to be Urban Land with wet substratum (603) and Udorthents with

wet substratum (655) (see Figure 6.2). Geotechnical information available at the time of this memo classify the soils as hydrologic soils group D, which has low infiltration potential. The cover condition and soils present in the Site result in minimal infiltration of stormwater under existing conditions. Areas to the North and East of the Site that were historically occupied with railroad and manufacturing facilities were redeveloped into mixed-use buildings that were required to limit infiltration during redevelopment.

6.4.2 Proposed Stormwater Management System

An overall goal of the Project is to provide a comprehensive stormwater management system designed to enhance the water resources both on the Site and downstream. The analysis outlined in this section concludes that the Project will vastly improve the existing conditions on the Site and accomplish this goal by:

- Implementing an environmentally sensitive site design that creates additional open space areas and significantly reduces the amount of on-site paved surface parking areas thereby re-establishing components of a natural water cycle (evapotranspiration, groundwater recharge and runoff) on the Site.
- Improving the surface water and groundwater quality by implementing integrated stormwater controls throughout the Project area including the use of Low Impact Development (LID) techniques, where feasible, as well as traditional stormwater Best Management Practices (BMPs) combined with a thorough Operation and Maintenance Plan.
- The stormwater management system is designed to attenuate the peak rate and volume of runoff to meet existing conditions.

The Project, under proposed conditions, maintains the existing hydrologic conditions and corresponding drainage subwatersheds. The eastern half of the Site will convey stormwater runoff to the 72-inch outfall and the western half of the Site will convey stormwater runoff to the 84-inch outfall. The Project shall install new drainage infrastructure within the proposed "Road K" and "Road L". Roof drains from the proposed buildings and site drainage associated with the five (5) blocks will connect directly into the existing drainage infrastructure in Revolution Drive, Grand Union Boulevard, Middlesex Avenue, and Foley Street, or into the proposed drainage infrastructure in "Road K" and "Road L". See Figure 6.4 Proposed Drainage Areas for the Site's proposed drainage area boundaries.

Stormwater runoff from the Site will be collected in a series of deep-sump catch basins with oil/debris traps and treated by proprietary particle separators and non-structural BMPs before discharging to either the 72-inch trunk line or to the 84-inch outfall. Regular sweeping programs for roads, parking, and loading areas, and a scheduled catch basin cleaning program will be proposed for pollutant source reduction. LID stormwater management techniques and BMPs will be incorporated into the design as much as possible for stormwater quality and temperature control

as the design development of each block progress. And are included in a Stormwater memo in each SPSR-A

A Long-Term Operations and Maintenance ("O&M") Plan will be prepared in future Special Permit and Subdivision applications. The O&M Plan will provide detailed procedures and a schedule for maintaining each of the BMPs. It is anticipated that the O&M plan will be formalized in an agreement with the City to maintain the proposed BMPs.

Refer to Plan C-4 Grading, Drainage, and Erosion Control Plan in Appendix A for the proposed drainage infrastructure in the Site and in the proposed roadways. After the PUD-PMP process, the Project will submit more detailed plans and information regarding the water quality design and stormwater runoff mitigation analysis as part of the Subdivision of Land, Proposed Roadway Applications, and Special Permit Applications on a Block by Block basis.

6.5 Private Utilities

The follow sections describe the existing and proposed private utilities surrounding the XMBLY Site:

6.5.1 Gas

Gas services to the Site are provided by National Grid. The existing gas lines surrounding the Site are as follows:

- 12-inch gas main running north-south along the centerline of Middlesex Avenue
- 20-inch gas main along the centerline of Mystic Avenue
- 8-inch gas main running east-west along Foley Street
- 12-inch existing gas line that on the eastern part of the Site that continues south on Grand Union Boulevard and east on Revolution Drive.

There are no gas services on Revolution Drive west of Grand Union Boulevard.

Service to all Blocks will be provided from existing gas mains surrounding the Site. Refer to Plan C-5 Utility Plan in Appendix A for potential gas connections to each of the four proposed blocks. Block 24, which is the existing office building, will maintain its existing gas connections to Mystic Avenue.

6.5.2 Electrical

There are several existing electric duct banks and manholes surrounding the Site in Middlesex Avenue, Foley Street, and Revolution Drive. Eversource provides the electricity for the ASRA.

Electric conduits run east-west on the northern side of Foley Street, with an electric manhole ("EMH") at the northeast corner of Foley Street and Middlesex Avenue intersection. This EMH can be utilized as a proposed connection point for Block 21.

The Project proposes to connect a new electrical duct bank to an existing EMH at the northeast corner of the "Road L" and Grand Union Boulevard intersection, run the proposed duct bank east-west along "Road L", and split the duct bank north and south along "Road K" and connect into the existing electrical duct bank in Revolution Drive. This new electrical duct bank will be used to service Blocks 21, 23, 25, and 26. See Plan C-5 Utility Plan in Appendix A.

There are also several existing EMHs are located on the eastern edge of Middlesex Avenue that can be used as proposed connection points for Blocks 21.

The existing building at Block 24 will maintain its existing electrical connections.

VHB will design the conduit and manhole system in conjunction with Eversource in order to accommodate the Project's required electrical infrastructure.

6.5.3 Telephone Communications and Cable

Verizon, Comcast, and RCN provide telephone communication services to the Project Area. The system consists conduits within underground duct banks. Telecom ductbanks are located along Grand Union Boulevard, east of the Site, including combined telecom manholes ("TMH") for Comcast, RCN, and Federal Realty owned house conduits, and separate TMHs for Verizon. A pair of these manholes are located just east of Block 23 on Grand Union Boulevard. A combined RCN and Comcast duct bank and series of manholes begin on Middlesex Avenue just west of Block 21, running north along Middlesex. This duct bank splits north and east at the intersection of Middlesex and Foley Street through a TMH. The RCN/Comcast duct bank runs east/west along the south side of Foley Street north of the Project and bends south onto Grand Union Boulevard.

Under proposed conditions, a new duct bank for RCN, Comcast, and Verizon conduits is proposed to be constructed along Roads "K" and "L" to provide service to each individual block. The proposed conduits would connect into the north side of the RCN/Comcast/FRIT and Verizon TMHs in Grand Union Boulevard, run north along Grand Union Boulevard, bend west down the intersection of "Road L" and Grand Union Boulevard, and run west/east in "Road K". These new telephone duct banks will be used to service Blocks 21, 23, 25, and 26. The ductbanks will terminate at proposed TMHs at either end of "Road K". See Plan C-5 Utility Plan in Appendix A.

The existing building at Block 24 will maintain its existing electrical connections.

VHB will design the conduit and manhole system in conjunction with Verizon, Comcast, and RCN to accommodate the required telephone communication infrastructure.

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Figure 6.3 - Estimated Sewer Generation and Water Demand

Project: XMBLY Planned Unit Development
Location: 5 Middlesex Ave, Somerville, MA

Proj. No.: 14000.01
Date: 10/17/2018
Computed by: DAH
Checked by: RH

Block	Use	Area(SF)	Unit	Bedroom	Quantity	Unit Flow[2] (Gal/Unit)	Average Flow (GPD)	Total Block Flow (GPD)	Total Development Flow (GPD)	New Sewer Flow [3,4], (GPD)	Required I/I 4:1 Mitigation (GPD)	Comments
Block 21	Retail	17,000	1000 SF		17.0	50	850	53,600	155,934	143,784	575,137	
	Restaurant[1]	3,000	seat		100	35	3,500					
	Office/Lab/R&D	646,000	1,000 SF	-	646	75	48,450					
	Fire Station	16,000	person/2 shifts	-	16	50	800					
Alta XMBLY (Block 23)	Residential	300,000	Bedroom	422	422	110	46,420	52,034				329 units
	Retail	6,280	1000 SF		6.3	50	314					
	Restaurant[1]	4,543	seat		151	35	5,300					
Block 24	Office/Lab/R&D	162,000	1,000 SF	-	162	75	12,150	12,150				Existing Building Program (modified
Block 25	Apartments	187,000	Bedroom	250	250	110	27,500	27,650				167 units
	Retail/Active	3,000	1000 SF		3.0	50	150					
Block 26	Office/Lab	140,000	1,000 SF		140	75	10,500	10,500				

Notes:

1) Restaurant seats are calculated based on 30 square feet per seat
2) *Average flows for Massachusetts are based on 310 CMR 15: Title V. Fire Station Sewer Flow Rate assumed 50gal/person/shift*
3) *Excludes flows from existing building from Block 24*
4) *Sewer flows are conveyed into Grand Union Boulevard sewer main, which discharges into the Somerville/Medford MWRA Intercepter Sewer.*

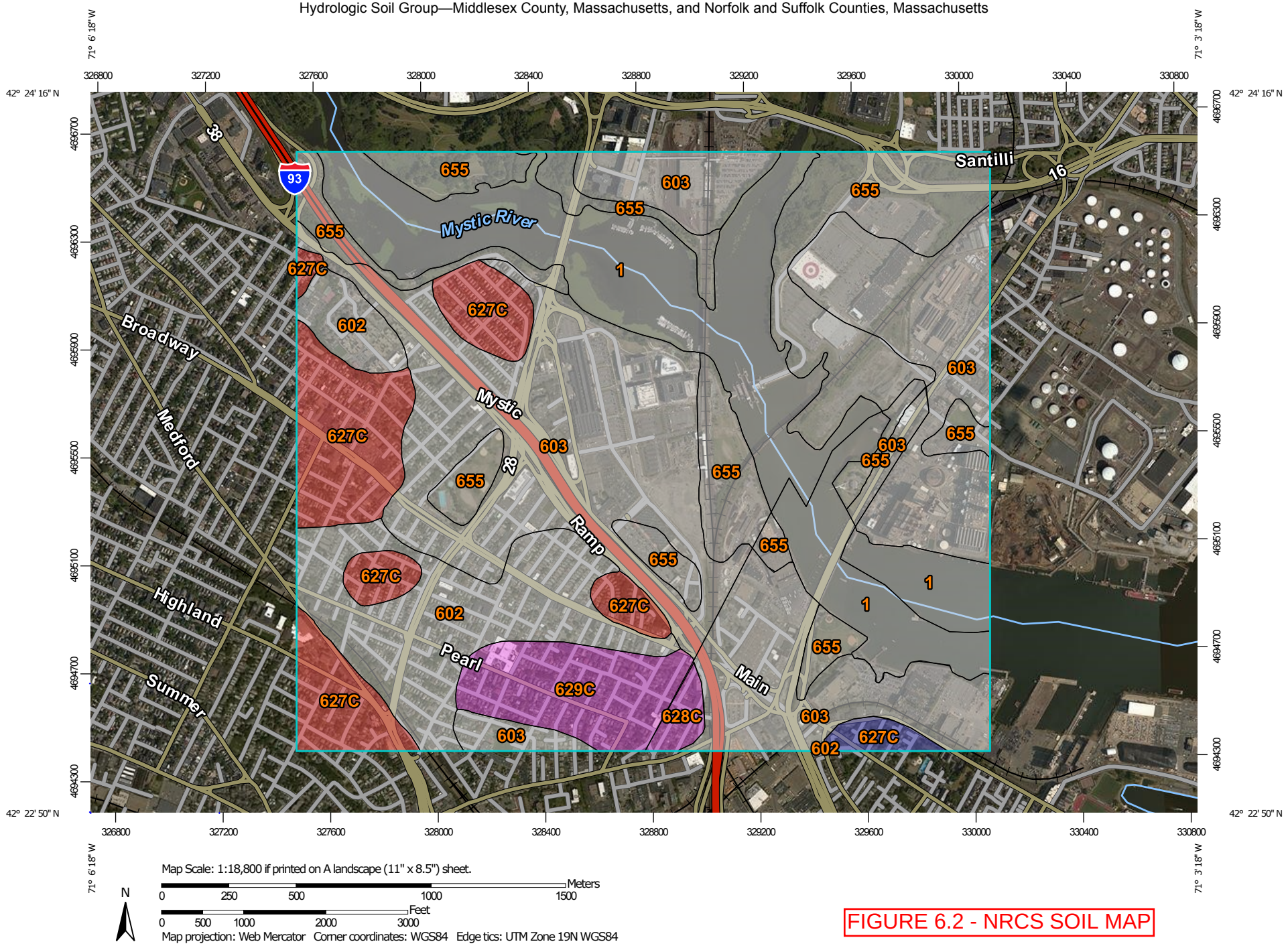

FIGURE 6.2 - NRCS SOIL MAP

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 17, Oct 6, 2017

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
Survey Area Data: Version 13, Oct 6, 2017

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 10, 2014—Aug 25, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Water		220.2	15.5%
602	Urban land		149.6	10.5%
603	Urban land, wet substratum		417.2	29.4%
627C	Newport-Urban land complex, 3 to 15 percent slopes	D	141.8	10.0%
629C	Canton-Charlton-Urban land complex, 3 to 15 percent slopes	A	63.2	4.5%
655	Udorthents, wet substratum		217.3	15.3%
Subtotals for Soil Survey Area			**1,209.5**	**85.1%**
Totals for Area of Interest			**1,420.8**	**100.0%**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Water		59.0	4.2%
602	Urban land, 0 to 15 percent slopes		0.1	0.0%
603	Urban land, wet substratum, 0 to 3 percent slopes		111.3	7.8%
627C	Newport-Urban land complex, 3 to 15 percent slopes	B	9.9	0.7%
628C	Canton-Urban land complex, 3 to 15 percent slopes	A	9.4	0.7%
655	Udorthents, wet substratum		21.4	1.5%
Subtotals for Soil Survey Area			**211.3**	**14.9%**
Totals for Area of Interest			**1,420.8**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

LEGEND

OS–1 DRAINAGE AREA CONTRIBUTING TO 72" OUTFALL AT MYSTIC RIVER

OS–2 DRAINAGE AREA CONTRIBUTING TO EXISTING MIDDLESEX AVE DRAIN LINES

GRAND UNION

FOLEY STREET

REVOLUTION DRIVE

MYSTIC AVENUE

CURB INLET

SIGN

NOTE: 12"D ABOVE 8"SEWER

0 40 80 160 Feet

vhb

Existing Drainage Areas
XMBLY
5 Middlesex Avenue
Somerville, Massachusetts

Figure 6.3

March 1, 2018

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LEGEND

OS–1 DRAINAGE AREA CONTRIBUTING TO 72" OUTFALL AT MYSTIC RIVER

OS–2 DRAINAGE AREA CONTRIBUTING TO EXISTING MIDDLESEX AVE DRAIN LINES

BLOCK 21
BLOCK 23
BLOCK 24
EXIST OFFICE BLDG
BLOCK 25
BLOCK 26
FOLEY STREET
REVOLUTION DRIVE
MYSTIC AVENUE
GRAND UNION

0 40 80 160 Feet

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Proposed Drainage Areas
XMBLY
5 Middlesex Avenue
Somerville, Massachusetts

Figure 6.4

March 15, 2018